The 2002 British Columbia Seafood Industry Year in Review

BRITISH COLUMBIA

Ministry of Agriculture, Food & Fisheries

Seafood is British Columbia's largest agri-food sector. In total, the sector contributes $368 million in Gross Domestic Product annually and generates more than $1 billion in revenues to the provincial economy. In 2002, British Columbia's seafood exports increased 4 per cent and topped $1 billion with shipments to 47 countries.

Production and values of British Columbia seafood are influenced by a variety of factors. Fluctuations in wild fish populations, competition in the marketplace, the degree to which raw material is valued-added and downturns in the economies of countries that are traditional markets all affect the amount of fish landed and its landed and wholesale value.

In 2002, harvests from wild and farmed sources rose 12 per cent and totalled 288.5 thousand tonnes with a landed value of $668.3 million. The wild landings and their associated values are derived from the harvest of fish and shellfish from British Columbia's commercial marine fisheries. In 2002, 67 per cent of all fish harvested in British Columbia came from the domestic commercial fleet participating in both near- and off-shore fisheries. The farmed landings and associated values originate from the harvest from British Columbia's commercial freshwater and marine aquaculture operations. In 2002, 33 per cent of the total seafood harvest for British Columbia was produced in aquaculture facilities.

Finished seafood products generated more than $1.1 billion in wholesale value, a 10 per cent increase over 2001. The wholesale value of British Columbia seafood is compiled from the sale of products from British Columbia's wild and farmed harvests and is supplemented with sales of fish imported to British Columbia for value-added processing. More than 80 species of fish, shellfish and marine plants are processed in British Columbia. In 2002, products derived from wild caught sources generated a total wholesale value of $758.5 million, while farmed salmon and shellfish products contributed more than $389.4 million in wholesale value.

Sport fisheries are also strong contributors to the provincial economy. Their role is detailed on the Ministry of Agriculture, Food and Fisheries (MAFF) web site along with other industry reports and statistics. This web site also provides more information on both fisheries and aquaculture at http://www.agf.gov.bc.ca/fish_stats/statistics.htm

British Columbia Seafood Production 2000 - 2002

	Wholesale Value[1] ... $ Millions ...			Landed Value[2] ... $ Millions ...			Landings[3] ... '000 Tonnes ...		
	2002[E]	2001[P]	2000[P]	2002[E]	2001[P]	2000[P]	2002[E]	2001[P]	2000[P]
Salmon									
Chinook	11.8	5.1	5.3	7.0	2.9	2.8	1.7	0.6	0.5
Sockeye	103.4	75.3	113.1	39.9	20.7	39.5	10.1	6.2	8.5
Coho	8.1	5.2	8.9	1.0	0.1	<.1	0.5	<.1	<.1
Pink	32.1	43.3	36.5	2.9	4.2	4.7	8.6	10.6	7.1
Chum	40.4	27.7	34.5	6.0	5.4	3.4	12.3	5.5	2.8
Subtotal[4]	198.6	160.9	199.8	56.8	33.3	50.4	33.2	22.9	18.9
Farmed Salmon	359.0	323.0	326.0	288.9	270.9	281.7	85.4	68.0	49.4
Farmed Trout	1.4	0.8	0.5	0.8	0.8	0.5	0.1	0.1	0.1
Herring									
Spawn on Kelp	11.2	12.8	12.5	9.2	10.5	10.4	0.36	0.43	0.38
Roe Herring	113.5	97.3	113.8	37.4	33.4	39.0	24.6	22.5	27.2
Food and Bait	3.1	2.5	2.8	0.2	0.2	0.7	0.2	0.2	0.2
Subtotal	127.8	112.6	129.1	46.8	44.1	50.1	25.2	23.1	27.8
Groundfish									
Halibut	60.0	49.9	61.8	48.0	37.2	42.5	5.4	4.6	4.8
Sablefish	23.1	26.5	36.0	16.6	24.6	31.6	2.2	3.0	3.9
Other Groundfish[5]	143.4	123.4	96.9	69.8	62.5	62.7	104.0	100.3	66.5
Subtotal	226.5	199.8	194.7	134.4	124.3	136.8	111.6	107.9	75.2
Shellfish									
Farmed	29.0	25.3	22.9	14.8	17.2	12.1	8.7	8.9	6.5
Wild	180.5	189.0	169.3	106.8	135.5	118.2	18.6	20.2	17.7
Subtotal	209.5	214.3	192.2	121.6	152.7	130.3	27.3	29.1	24.2
Other									
Tuna	22.6	31.3	21.6	18.4	26.0	15.7	5.1	6.6	5.0
Other	2.5	1.4	1.6	0.6	1.2	1.0	0.6	0.6	1.0
Subtotal	25.1	32.7	23.2	19.0	27.2	16.7	5.7	7.2	6.0
Grand Total	1,147.9	1,044.1	1,065.5	668.3	653.3	666.5	288.5	258.3	201.6

E Estimates - Volume and value estimates are derived from information available to June 2003 that has been adjusted to account for missing data.

P Preliminary – Volumes and/or values are revised from previously published estimates but are not yet final.

1. Wholesale Value – The value of the fish after processing. All of the fish from the British Columbia landings are included in the wholesale value as well as all fish imported from outside British Columbia that has undergone processing within the province.
2. Landed Value – The price paid to the commercial fishers and/or aquaculturists for the whole fish. In aquaculture this can also be referred to as farmgate value
3. Landings – The round (whole) weight of the fish harvested from the British Columbia commercial fisheries and/or aquaculture operations.
4. The total wholesale value of wild salmon includes the value of salmon products such as offal, meal and oil which cannot be identified by species. The wholesale values of individual salmon species include the value of products derived from imported fish (e.g. almost all the coho wholesale value in 2001 is derived from the processing of imported coho).
5. Total wholesale value for "Other Groundfish" includes fish meal and oil unidentified by species.

British Columbia Wild/Farmed Landings & Values 2000 - 2002

	Wholesale Value ... $ Millions ...			Landed Value ... $ Millions ...			Landings ... '000 Tonnes ...		
	2002[E]	2001[P]	2000[P]	2002[E]	2001[P]	2000[P]	2002[E]	2001[P]	2000[P]
Wild	758.5	695.0	716.1	363.8	364.4	372.2	194.3	191.3	145.6
Farmed	389.4	349.1	349.4	304.5	288.9	294.3	94.2	77.0	56.0
Grand Total	1,147.9	1,044.1	1,065.5	668.3	653.3	666.5	288.5	258.3	201.6

E Estimates
P Preliminary

COMMERCIAL FISHING

The 2002 season's harvest was up 7 per cent from the previous year, to 194,300 tonnes while the landed value was little changed at $363.8 million. Recent years have seen fishers retaining more of their catch for direct marketing initiatives using local processing facilities as custom processors instead of simply selling the raw, unprocessed fish to the processing plants. This development has allowed the fishers to sell their fish at value-added prices to consumers and therefore realize increased profits.

Salmon

The 2002 commercial harvest of wild salmon was up 45 per cent to 33,200 tonnes although it was still well below the long-term average. The corresponding landed value increased as well to $56.8 million from $33.3 million the previous year. This 71 per cent increase in the total wild salmon landed value is directly attributable to the species mix of the harvest in 2002 where the higher-valued sockeye and chinook showed significant increases in total landings and generated $46.9 million of the wild salmon total.

✦ Sockeye

Harvest of sockeye was 63 per cent higher than 2001, and, at 10,100 tonnes, made up 30 per cent of the wild salmon harvest by weight. The larger harvest and higher prices paid to fishers translated into a doubling in the landed value to almost $40 million and contributed 70 per cent of the total value of the wild salmon harvest. Sockeye products (including those from imported sources) generated more than $103 million in wholesale value.

Herring

In British Columbia herring is one of our most important and valuable seafood products. Valued primarily for its roe, there are also targeted harvests of herring for food and for use as bait. The 2002 harvest of all herring was 25,200 tonnes with a landed value of $46.8 million. The two key herring products are herring roe and herring spawn-on-kelp, which, combined, generated close to $125 million in wholesale value in 2002. The much smaller food and bait herring fishery generated $3 million in wholesale value.

Groundfish

In 2002, the total British Columbia groundfish harvest rose slightly to 111,600 tonnes. The corresponding landed value was up 8 per cent to $134.4 million primarily due to higher prices paid for halibut and hake. Overall, the 2002 wholesale value of groundfish was up 13 per cent from 2001 levels to $226.5 million.

✦ Halibut

Halibut continued to be the most important single species in the British Columbia groundfishery in terms of value. Halibut landings were up 17 per cent and the resultant landed value rose by 29 percent to $48 million and made up 36 per cent of the groundfish landed value. Similarly, the wholesale value of halibut products increased 20 per cent, generating $60 million and contributing 26 per cent of the total wholesale value for all British Columbia groundfish.

✦ Hake

Hake is the highest volume catch in British Columbia's commercial fishery. In the mid-90's provincial processors focussed on developing a product and market for this previously underutilized species. The next step was to secure access to the resource. For many years foreign factory vessels with on-board processing capacity had been allocated significant portions of the total allowable catch (TAC) of hake. The 2002 season was a landmark year for British Columbia hake processors as the Pacific hake TAC was allocated in its entirety to be delivered to on-shore plants. The 56,900-tonne harvest generated $17.6 million in landed value while the surimi and fillet products generated more than $37 million in wholesale value.

British Columbia Groundfish Production
2000 - 2002

	Wholesale Value ... $ Millions ...			Landed Value ... $ Millions ...			Landings ... '000 Tonnes ...		
	2002[E]	2001[P]	2000[P]	2002[E]	2001[P]	2000[P]	2002[E]	2001[P]	2000[P]
Dogfish	6.3	8.0	7.1	3.1	2.8	3.7	4.7	4.5	4.7
Hake	37.3	29.5	9.1	17.6	12.2	6.3	56.9	53.3	21.7
Halibut	60.0	49.9	61.8	48.0	37.2	42.5	5.4	4.6	4.8
Lingcod	7.4	6.9	6.3	5.2	5.2	6.5	2.7	2.5	3.0
Pacific Cod	3.4	3.0	3.4	0.9	0.6	1.2	0.7	0.5	0.7
Pollock	4.5	2.8	3.5	1.7	0.8	0.5	3.6	1.8	1.0
Rockfish	47.4	43.5	49.4	31.6	31.6	36.1	21.9	22.2	23.4
Sablefish	23.1	26.5	36.0	16.6	24.6	31.6	2.2	3.0	3.9
Soles	14.9	11.6	11.0	7.7	6.4	6.5	6.7	5.5	5.9
Turbot	4.0	5.6	2.1	1.5	2.4	1.3	5.2	8.3	4.3
Other	18.2	12.5	5.0	0.5	0.5	0.6	1.6	1.7	1.8
Total	226.5	199.8	194.7	134.4	124.3	136.8	111.6	107.9	75.2

E Estimates
P Preliminary

Shellfish

In 2002, the British Columbia wild shellfish harvest fell 8 per cent to 18,600 tonnes. The total landed value, at $106.8 million, showed a 21 per cent decline primarily in the geoduck, crab and prawn fisheries. In 2002, the wholesale value of all British Columbia wild shellfish was down 4 per cent to $180.5 million.

✦ Geoduck Clams

Although only 10 per cent of the wild shellfish harvest by weight, at 1,800 tonnes, geoduck generated $38.5 million and contributed 36 per cent of the total landed value of wild shellfish. Geoduck products generated $51.4 million in 2002, and represented 28 per cent of the total wholesale value of British Columbia wild shellfish products.

✦ Crab

Crab landings were significantly curtailed in 2002 due to harvesting restrictions in place to reduce the capture of crabs during their soft-shell stage. The crab harvest contributed 22 per cent of the total shellfish harvest at 4,100 tonnes with a landed value of $28 million. Primarily sold as fresh and live products a large portion of sales are fishers' direct sales to the public. These dockside sales together with the value-added sales from processing plants generated more than $51 million in wholesale value.

✦ Prawns

In 2002, the prawn harvest declined 19 per cent to 1,700 tonnes. Meanwhile, the landed value was only half of that in 2001 at $17.7 million and the wholesale value of prawn products fell from $39 million to $32 million.

British Columbia Shellfish Production
2000 - 2002

	Wholesale Value ... $ Millions ...			Landed Value ... $ Millions ...			Landings ... '000 Tonnes ...		
	2002[E]	2001[P]	2000[P]	2002[E]	2001[P]	2000[P]	2002[E]	2001[P]	2000[P]
Farmed									
Clams	11.8	10.6	9.6	7.1	8.2	6.1	1.4	1.4	1.1
Oysters	15.6	13.6	13.0	7.2	8.5	5.7	7.2	7.4	5.3
Scallops & Other	1.6	1.1	0.3	0.5	0.5	0.3	0.09	0.11	0.06
Subtotal	29.0	25.3	22.9	14.8	17.2	12.1	8.7	8.9	6.5
Wild									
Clams	10.1	7.9	7.7	6.1	6.1	4.9	2.0	1.9	1.6
Crabs	51.4	50.8	35.2	28.0	36.8	20.3	4.1	5.7	2.8
Geoducks	51.4	60.1	49.5	38.5	43.8	41.8	1.8	1.8	1.8
Scallops	0.8	0.5	0.3	0.3	0.3	0.3	0.05	0.05	0.05
Sea Cucumbers	6.5	4.5	3.2	1.5	1.8	2.3	1.2	1.0	1.0
Sea Urchins: Red	17.7	16.7	22.7	8.0	7.7	9.3	4.8	4.5	5.3
Sea Urchins: Green	1.0	1.3	1.4	0.5	0.5	1.0	0.14	0.12	0.18
Shrimp	7.8	7.5	8.1	5.0	3.9	4.4	2.0	2.4	2.6
Prawns	32.0	39.0	40.2	17.7	33.9	33.1	1.7	2.1	1.7
Other	1.8	0.7	1.0	1.2	0.7	0.8	0.8	0.6	0.7
Subtotal	180.5	189.0	169.3	106.8	135.5	118.2	18.6	20.2	17.7
Total	209.5	214.3	192.2	121.6	152.7	130.3	27.3	29.1	24.2

E Estimates
P Preliminary

AQUACULTURE

Various culture techniques are employed in the production of 30 species of finfish, shellfish and plants on 700 sites in both the marine and freshwater environments. The combined farmed production of salmon, trout and shellfish was up 22 per cent to 94,200 tonnes and the total value of the sector increased to $304.5 million in farmgate value.

Marine farm sites rearing primarily salmon, oysters and clams are dominant in the provincial aquaculture industry in terms of relative share of sites (77%), production (99%) and value (99%).

Marine Salmon Farming

With about 80 of 126 sites operating at any given time, marine finfish farms are the mainstay of British Columbia's commercial aquaculture industry. Most marine salmon farms focus on culturing one species of salmon but some operate with both Atlantic and Pacific salmon species in their production cycles. In 2002, Atlantic salmon was shipped to market from 51 sites while farmed chinook was harvested from 19 sites and farmed coho from another 5 sites.

In 2002, the harvest of farmed Atlantic, chinook and coho salmon increased to 85,400 tonnes. Although 2002 market prices were not as strong as in 2001, farmed British Columbia salmon generated a total farmgate value of $288.9 million and continued to be the number one seafood commodity in British Columbia.

Freshwater Finfish Farming

In contrast to the salmon farming sector, the 150 freshwater operations are primarily one-species, one-site, owner-operated and almost exclusively located in rural communities on private land. In 2002, 63 hatcheries generated $12 million in sales of smolts to the marine finfish sector and juvenile trout to freshwater trout farms. Food market sales of trout, char, tilapia and sturgeon totalled 116 tonnes worth $605 thousand. In addition, the fee fishing sector, targeting the tourist market, harvested 24 tonnes of trout and generated $250 thousand in sales. British Columbia freshwater aquaculture harvests generate virtually all of the value at the farm gate as food market harvests undergo minimal value-added processing and the fee fishing harvest, (where a fee is paid for the recreational fishing experience at the private lake or pond) is sold directly to the consumer.

Shellfish Farming

More than 400 shellfish farms operated on beaches and in deep-water sites located primarily in southern British Columbia, in 2002. The combined harvest of oysters, mussels, clams and scallops was little changed from 2001, at 8,700 tonnes valued at $14.8 million.

The commercial culture of Pacific oysters in British Columbia can be traced back to 1912. At 7,200 tonnes the oyster harvest made up more than 80 per cent of the provincial shellfish aquaculture harvest by weight (in-shell), but generated one half of the total landed value. By comparison, the farmed clam harvest, at 1,400 tonnes, comprised only 16 per cent of the harvest by volume but generated close to 48 per cent of the total value.

The British Columbia shellfish farming industry is diversifying from its traditional base of oysters and Manila clams. Technology is being developed for valuable new shellfish species such as geoduck clams and Northern abalone.

SEAFOOD PROCESSING

During 2002, 186 companies operated 213 fish processing facilities throughout British Columbia. Of the total plants licensed to process seafood in 2002, 74 operations were licensed for local sales and services such as sport caught fish processing, trout processing, bait and animal feed production (from by-products), and commercial freezing and storage. An additional 139 were involved in production of seafood for both the domestic market and for export to Japan, United States and other major centres around the world. The number of fish plants and fish processing companies has increased in recent years and the trend is expected to continue.

In addition to the fish obtained from British Columbia commercial fisheries and aquaculture operations, processors source sockeye and pink salmon, Atlantic salmon, halibut, herring and trout from outside of the province and Canada. For the imported fish that is significantly processed into value-added products such as smoked, canned and fillets, the wholesale values are included in the provincial totals. In 2002 the total wholesale value of British Columbia seafood products, derived from all sources combined, approached $1.2 billion. Products from farmed salmon generated $359 million, wild salmon $198.6 million, groundfish $226.5 million, shellfish $209.5 million, herring $127.8 million and other fish $26.5 million.

Canned Salmon

Canned salmon production in British Columbia topped 470,000 cases in 2002. The pack was almost 200,000 lower than in 2001 due to a lower pink salmon pack. Canned salmon, including added-value specialty canned items such as paté, smoked, and skinless-boneless salmon, generated $60 million representing a 30 per cent share of the total wholesale value of all wild salmon products.

Domestic sources of wild salmon contributed 76 per cent of the pack this year up 10 per cent from 2001. Fifty-nine per cent of all salmon canned in the province for the 2002 season was pink salmon. The six major canneries also accessed almost 3,700 tonnes of salmon from Alaska and Russia, which contributed 24 per cent of the total canned salmon production for the season. Wholesale revenues from the imported canned salmon are estimated at $12 million dollars.

Employment

Employment in British Columbia's fish processing facilities is also increasing and in 2002 this sector reported a total of 9,100 jobs. Fish processing can be seasonal, and often part-time, and as a result the job count translates into 5,700 person years of employment. As expected, most jobs (86 per cent) are production employees with administrative, office and sales jobs making up the remaining 14 per cent of the British Columbia fish processing sector work force. Total wages and salaries paid in 2002 by British Columbia fish plants totalled $152 million. For full- and part-time workers combined, the average annual wage earned in this sector is estimated at $26,700 per person-year (excluding benefits).

The Outlook for 2003

- **Wild Salmon**

The outlook for most stocks in 2003 is similar to 2002. Based on preseason forecasts fishing is expected to be average or slightly above average with fishing opportunities for all sectors. Barkley Sound sockeye and Northern and Central Coast coho and chinook are expected to provide good fishing opportunities and Fraser River pink salmon are expected to return at above average levels. Fraser sockeye are on the off-cycle so overall abundance will be about one-third of the 2002 level. Chum returns are forecast to be below average.

- **Groundfish**

Groundfish hook and line harvests will show a decrease in 2003 due to rockfish conservation measures. The groundfish trawl outlook is good with the hake TAC expected to be slightly lower while the landed value will remain steady and the wholesale value is expected to increase slightly. Sablefish prices are good and early indications are that halibut will hold steady. Opportunities for dogfish, lingcod and other minor species will likely be similar to last year.

✦ **Shellfish**

Wild shellfish harvests will fluctuate among species but the overall catch and value is expected to remain relatively steady. The prawn fishery looks promising and prices are expected to be stronger in 2003. The 2003 TAC for geoducks is down slightly. Urchins remain steady with a solid market. The crab harvest is expected to remain similar to 2002.

✦ **Herring**

The 2003 TAC is slightly higher than the previous year. Markets for various roe products will show little change in 2003 but if the harvest increases, the overall landed and wholesale values are expected to increase slightly as well.

✦ **Aquaculture**

The outlook for farmed shellfish production is positive with a slight increase expected in harvest levels for most species including the higher-valued geoduck. Both farmgate and wholesale values are expected to reflect this change in species mix as well. Farmed salmon production is expected to fall in 2003 and with the US market uncertainties the values are also expected to be lower

British Columbia Seafood Industry 2003

	Harvest	Landed Value	Wholesale Value)
Wild Salmon	↔	↔	↑
Farmed Salmon	↓	↓	↓
Herring	↑	↑	↑
Halibut	↓	↔	↑
Groundfish	↔	↔	↔
Wild Shellfish	↔	↔	↔
Farmed Shellfish	↑	↑	↑
Other Species	↔	↔	↔
Total BC	↔	↔	↑

Signficant Events 2002/3

SWOT Analysis

There have been significant changes in the British Columbia seafood and sport fishing sectors over the last 10 – 15 years. The last comprehensive review of the sectors undertaken by MAFF was in the early 1980s. In developing a strategy to renew the fisheries it was recognized that there was a critical need for current information to provide the basis for strategy and policy development and bench-marking.

A SWOT (strengths, weaknesses, opportunities and threats) analysis of the seafood sector (commercial fishing, aquaculture and processing) and tidal water sport fishing sector has been initiated. The final report, due in October 2003, will provide information on industry profiles, competitive assessments and opportunities. The SWOT analysis should assist not only government agencies, but also industry, communities, stakeholders and First Nations in their planning.

Economic Measures Fund (EMF)

Announced in 2002/3 the provincial EMF, of the Treaty Negotiations Office, is a $10 million per year four-year program. MAFF coordinates more than $1 million in contribution agreements with First Nations to support economic development measures including shellfish business planning, co-ordination and training. For example:

✦ **Huu-Ay-Aht First Nation Community Abalone Project**

Funding was provided to develop and plan an innovative, environmentally sound and economically sustainable aquaculture operation for Northern abalone in Bamfield, British Columbia. The program plans to train and employ First Nations in both the hatchery and grow out facilities.

✦ **Nuu-Chah-Nulth Tribal Council (NTC)**

The NTC received support to further develop capacity in the business of shellfish aquaculture. The plan is to facilitate partnership opportunities between individual Bands' shellfish initiatives and investors as well as to create a marketing council to work with farm operators to build production capacity, markets and business channels for processing and distribution.

Aquaculture Industry Compliance Initiatives

- The Compliance and Enforcement Service Agreement between the Ministry of Water, Land and Air Protection (WLAP), the Ministry of Sustainable Resource Management (MSRM), Land and Water British Columbia Inc. (LWBC) and MAFF was developed to make more efficient use of agency resources, minimize duplication in compliance and enforcement efforts, increase transparency, foster increased levels of industry compliance and increase public confidence in the Provincial regulatory framework.
- The joint MWLAP/MAFF Annual Inspection Report on Marine Finfish Aquaculture Site fulfils MAFFs commitment to transparency with respect to administration of the finfish aquaculture industry.
- MAFFs Compliance and Enforcement program was enhanced and bolstered by staff additions. These additions will enable MAFF to build on its record of 139 formal investigations undertaken in 2002.

Development Initiatives

✦ **Distribution Survey for Tanner (Red Snow) Crab**

Under the New and Developing Fisheries Program, MAFF along with co-sponsoring federal agencies, is developing a new fishery for red snow crab: *Chionoecetes tanneri.* The North Coast Distribution survey phase was successfully completed in March 2003 off the west coast of the Queen Charlotte Islands. Information collected during this phase will be presented to Pacific Scientific Advice Review Committee (PSARC) in June 2003. PSARC recommendations will provide direction for future management of this species.

✦ **North Island Shellfish Aquaculture Barriers and Constraints Study**

The study provides government and industry with a formal risk assessment of the variables that influence the success of shellfish aquaculture on northern Vancouver Island. Recommendations stemming from the report include: moving from a supply-driven

to a market-driven approach; focusing on producing product brands, value-added products, and high-value products; and marketing those products with other producers facing similar challenges. The final report was delivered in April 2003 and is available on the MAFF web site.

✦ West Coast Vancouver Island Shellfish Development

This is a comprehensive and current profile of the shellfish aquaculture industry in both Barkley and Clayoquot Sounds for use in maximizing collaborative opportunities for the successful development of a regional shellfish industry on the west coast. The report provides information on investment, production, employment, barriers to expansion, and industry issues and priorities.

✦ Salmon Aquaculture Industry Competitiveness Report

Released in June 2003 the purpose of the assessment was to determine areas in which government can help increase the competitiveness of the industry. Key findings of the report include:

- The lack of new tenures for rearing space is the single largest factor impacting on the industry's ability to compete in global markets;
- Costs of production in British Columbia are the second highest of all jurisdictions represented in the survey group;
- The industry in British Columbia benefits from its close proximity to markets in the United States and from the favourable exchange rate between Canada and the US.

Shellfish Aquaculture Update

There are currently more than 450 shellfish marine aquaculture sites in the province. A total of 22 new shellfish sites, covering 200 hectares, have been tenured. This represents an 8 per cent increase in tenured area since the last report; of these new tenures, 11 were for First Nations covering 138 hectares.

There are 62 new applications for shellfish in process, 51 of these applications have been offered by LWBC to the applicants and of these, 48 are pending completion of the FOC-led Canadian Environmental Assessment Act review. These 48 applications are for 462 hectares of potential new shellfish farms. Of these 48 applications, 30 totalling 241 hectares are applications by First Nations.

There are four First Nations groups actively involved in the Memorandum of Understanding to establish shellfish aquaculture reserves, these include the Hamatla, Hul'quimi'num, Halata, and T'Souke First Nations. In the South Coast region a series of MOUs that will reserve more than 600 hectares for shellfish aquaculture is anticipated. On the North Coast, MAFF is working with the Tshimshian Stewardship Council and the First Nations of the Turning Point initiative to establish MOU sites and the supporting training, infrastructure and relationships to develop a viable industry. These processes are being supported by joint Provincial and Federal program funding.

New Species Update

✦ Sablefish

The culture of sablefish has occurred on a small, primarily experimental, scale for over a decade. The fish is well suited to domestication and to net cage culture. In recent years the technology for breeding of adults and rearing of juveniles has improved. However, the supply and survival of juveniles is still uncertain. The development of sablefish culture would allow for diversification in the marine net pen farming sector with the addition or supplementation of sablefish on existing salmon farms. The first harvest of farmed sablefish occurred during the spring of 2002. A new sablefish hatchery has been constructed and broodstock and larvae are scheduled to be onsite pending completion of the government's permitting process.

✦ Sturgeon

Commercial white sturgeon farming has developed out of experimental work at Malaspina University-College when in the late 1990's surplus domestically produced sturgeon juveniles were offered to commercial growers. In 1999 the first aquaculture licence for commercial culture was issued and in 2002 the farmed fish had grown to marketable size and were sent to the lower mainland for sale in the live fish markets.

MAFF is now working to educate consumers on issues related to wild sturgeon conservation and to develop a comprehensive policy framework for future sturgeon aquaculture development. A licensing program is also under development with MWLAP.. Under this program, all live farmed sturgeon will be tagged in order to differentiate farmed fish from wild fish. While the retention of wild sturgeon in British Columbia is not permitted, on-going poaching does occur and the tagging and licensing system will reduce the potential that wild-caught sturgeon could be marketed as a farmed fish.

✦ Savoury Clams

In the second year of harvest of this species the yield from existing shellfish tenures reached 55 tonnes with a farmgate value of $153 thousand.

✦ Gallo Mussels

Several commercial growers have amended their existing shellfish operations to include gallo mussel culture. In 2002, the harvest was 13 tonnes for a farmgate value of $40 thousand.

Seafood Summit

More than 100 participants attended the summit in October 2002. The workshop titled "Sustainability through Co-management: Managing for a Sustainable, Profitable Fishery" was organized by the British Columbia Seafood Alliance and supported by MAFF and Fisheries and Oceans Canada (FOC). The theme was "shared stewardship" of fisheries resources by government and industry. All parties share responsibility for enhancing environmental sustainability and economic capacity. In addition to co-management, the need for clear policies and regulations was addressed as a means to support the industry in the demanding international marketplace. Based on the discussions at the workshop, the British Columbia Seafood Alliance made a number of recommendations to make co-management an effective tool for improving both conservation and economic performance.

Broughton Sea Lice Action Plan

The pink salmon return in the Broughton Archipelago was down dramatically in 2002. The Broughton Archipelago action plan seeks to address concerns that the drop was linked to sea lice from fish farms and to identify other conditions that may have contributed to the decline, such as warm weather, earlier record high populations and low water in salmon streams.

The sea lice action plan is based on adaptive management involving continual assessment of the situation in the Broughton Archipelago and modification of the approach. It is a combination of the two options presented by the Pacific Fisheries Resource Conservation Council in November 2002. Key components of the action plan are:

- Creation of a pink salmon migration corridor through strategic fallowing and accelerated harvesting of area salmon farms;
- Enhanced monitoring of both farmed and wild salmon, and co-ordinated sea lice treatment;
- Reviewing the legal framework for fish health;
- Focussed research; and
- Improved dialogue.

Finfish Aquaculture Application Guide

http://www.agf.gov.bc.ca/fisheries/siting_reloc/marineff_applic_guide_main.htm

The "Guide to Information Requirements for Marine Finfish Aquaculture Applications" outlines the information required by the provincial agencies that are responsible for licensing and regulating finfish aquaculture operations. The guide will be used by applicants for new finfish aquaculture licences and Crown land tenures; renewal of existing finfish aquaculture tenures and renewal of existing finfish aquaculture licences.

Coastal Planning

- **Baynes Sound Action Plan (BSAP)**

The BSAP has been developed pursuant to the Provincial mandate and jurisdiction over coastal and foreshore areas of British Columbia. The document will be of assistance to LWBC and other provincial agencies when tenure and licence applications for shellfish culture are considered, as well as regulating tenures and licences. It will also assist coastal communities, development proponents and participating First Nations, by identifying opportunities for, and constraints to, future shellfish aquaculture. The BSAP and the process used to develop it satisfy the draft Sustainability Principles under development by the Ministry of Sustainable Resource Management on behalf of government. As a living document, the BSAP will require regular monitoring and will likely be subject to amendments over time as circumstances change and new information is made available. In the meantime the BSAP moves government and coastal users toward the generation of new opportunities for shellfish aquaculture in Baynes Sound.

- **Cortes Island Coastal Plan for Shellfish Aquaculture**

The plan has been developed to guide the sustainable development and management of the Cortes Island shellfish aquaculture industry. It will help prevent future resource conflicts around shellfish farming, but also provides certainty for existing shellfish farmers.

- **Kyuquot Sound Coastal Plan**

This plan was created to enhance sustainable economic development and uphold environmental values. A government-led process involved targeted stakeholder consultation, co-operation and collaboration with other agencies, governments, First Nations and the local community.

- **North Island Straits Coastal Plan**

The plan balances economic opportunities and local jobs with environmental protection. It provides clarity and greater certainty about existing and future coastal use.

New Technology Pilot Projects Update

The salmon aquaculture pilot projects involved a $9.7-million investment by the aquaculture industry. The projects tested new closed-containment systems with waste recovery, new diets that reduce the use of fish meal, and a freshwater envelope to rear freshwater fry in the marine environment. An evaluation of the economic, environmental and production performance of these projects is on the MAFF web site at: http://www.agf.gov.bc.ca/fisheries/technology/new_tech.htm

Aquaculture R & D Update

The British Columbia government presented $3.75 million to fund research partnerships on aquaculture and the environment. The peer-reviewed, scientific research is being led by the aquaculture research and development committee of the Science Council of British Columbia. The committee, formed a year ago, has identified priority research topics and is managing the new Aquaculture and the Environment Fund. This funding for scientific research supports the government's commitment to continuous improvement of the environmental, economic and social performance of the industry. The research fund provides a mechanism to support scientific research needed to address issues associated with both finfish and shellfish aquaculture that are of concern to British Columbians. These concerns have been identified through processes including the salmon aquaculture review, the shellfish development initiative, and the work over the past year by the British Columbia aquaculture research and development committee.

In addition, the province provided $1.25 million to support a chair for sustainable aquaculture at the University of British Columbia, and $100,000 to the new Malaspina University-College Centre for Shellfish Research in Nanaimo.

Agriculture and Agri-Food Canada Includes Seafood

Agriculture and Agri-Food Canada (AAFC) has expanded their mandate to include seafood in their export market development programs. The province is working with AAFC and industry to ensure that the British Columbia seafood sector is given increased access to the Canada Agriculture and Food International (CAFI) funding. This includes the implementation of a five-year marketing strategy to develop international marketing opportunities for Canadian aquaculture products under the CAFI Program. The funding for the first year of the five-year strategy is provided by Agriculture and Agri-Food Canada.

Inshore Rockfish Conservation

For the 2002 directed inshore rockfish commercial fishery, the TAC was reduced to align the harvest levels with a fishing mortality rate of 1.5 per cent. The rockfish Inside Category ZN quota was reduced from 2001 levels by 75 per cent and the Outside Category ZN inshore rockfish quota was reduced by approximately 50 per cent. For 2002, the inshore rockfish by-catch quota was reduced from 2001 levels by approximately 50 per cent for both the commercial halibut fishery (from 210 tonnes to 110 tonnes) and the groundfish trawl fishery (from 23 tonnes to 12 tonnes). Other commercial fisheries that encounter inshore rockfish as by-catch will continue to harvest their target species in 2002; however, efforts to avoid inshore rockfish will be increased. FOC is continuing to work with industry to address by-catch issues in each fishery.

Marine Stewardship Council (MSC) Certification of the BC Salmon Fishery

The MSC has developed an environmental standard for sustainable and well-managed fisheries. It uses a product label to reward environmentally responsible fishery management and practices. The formal assessment process for the British Columbia salmon fishery is underway based on the performance indicators and criteria which have been reviewed and accepted by stakeholders. The process is expected to be completed some time in 2004.

Data Sources:

All wild fisheries landings are provided by Fisheries and Oceans Canada, Pacific Region. (Preliminary values for 2000 and 2001 and estimates for 2002 have been adjusted.)

All seafood finished products and wholesale values as well as aquaculture industry harvests and farmgate values are compiled by the provincial Ministry of Agriculture, Food and Fisheries.

We encourage you to send us your comments on this publication and any suggestions for future issues to:

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